The Last Defense

Table of Contents

Game Mechanic

Basics:
- The player is trying to defend an object at the end of a track.
- Enemies will spawn in waves at one end of the track and march toward the object which is at the end of the track. If they reach the object, they will damage it until they either destroy the object or the player kills the enemy.
- The player wins if they defeat all the waves of enemies and the object's health is above 0. If the object loses all its health, the player loses, and the game is over.
- Enemies will get harder and increase in number as the player progresses through waves.
- When the player kills enemies, they will receive a number of scrap based on the difficulty of the enemy. They can use these scraps to place towers anywhere on the track or unlock weapons and perks.
- Weapons will consist of unlockable guns or grenades. These will have replenish times in between uses.
- Towers will be placeable anywhere on the map.

Strategy:
- Most of the strategy comes from how the player chooses to spend their scraps.
- One possible strategy would be for the player to invest almost all of their scraps into towers. The player would focus on buying new towers for weak spots in their defense and making sure they have the towers necessary to defeat specific enemies.
- An alternate strategy would be to invest very little into towers and instead focus on upgrading the player's character. This can be done by buying perks and weapons for the character instead of towers.
- A final major strategy would be for the player to split their scraps between themselves and their towers. For instance, the player would buy towers on a hard to reach lane so that they do not have to worry as much about that while they hold another lane with their character.
- Other game strategies would develop from how the player uses combinations of character weapons, towers, and perks.

Minimum Viable Product:
- The player can move left, right, up, and down.
- The player shoots in the direction of the mouse cursor.
- Enemies spawn in waves of increasing difficulty.
- When an enemy is defeated, it will give the player scrap based on its difficulty.
- If the enemies kill the player or destroy the end goal, the game is over.
- The player can interact with a shop menu to trade their scrap for weapons and towers at any point in the game.
- Weapons will have cooldowns when used. They will cool down even when not held.

Gamestate

- Player location. Changes with player movement.
- Player Scrap. Increases when an enemy is killed. Decreases when something is bought.
- Number of enemies, their location, health, armor.
- Time on the timer
- Towers, their health, location, range
- Player unlocked weapons and perks
- Timers for reload of weapons and perks(eg. grenades)
- Wave Enemies (Killed, Alive, Waiting to Spawn)
- Current Wave (What enemies to spawn on current wave, Wave Number)

Game Features

- The player can move forward, backward, left, and right.
- The player will shoot in the direction of the mouse with the selected weapon.
- The camera will be able to zoom in on the player and out for an overview of the map. It will center on the player as it is zoomed in and center on the map as it zooms out.
- The player will be able to open and close a menu for buying towers.
- The player will be able to open and close a menu to buy weapons and perks as well as set bought items to the hotbar. There will also be a keypress that will cycle the current weapon class (eg. grenade) to the next weapon in that class on the hotbar.
- Weapons and perks will have cooldowns when used. They will cool down even when not held.
- The player can only move and place towers on the track. However, the player and towers can shoot over non-track areas if the terrain permits.
- Towers have a radius around themselves within which other towers cannot be placed. This will prevent the player from trapping themselves on the track.

Story and Setting

Backstory:
You have crashed behind enemy lines. The enemy forces are moving on your location and you must defend your downed helicopter. You have many resources and weapons at your disposal to build defenses and hold back the enemies.

Setting:
The setting is a stylized modern era with monsters. The environments are based on the real-world such as desert, canyons, snowy mountains, etc. Any buildings will be based on real-world modern buildings that can be seen today. It will be stylized with cartoon art and models that mimic reality but in a more game style. Weaponry will also be based on real guns and weapons. Some things will be gamified such as a tool kit for repairing towers but will still fit the modern feel. The enemies will be represented by monsters. These will also be stylized.

Balancing

Enemies:

Slime:
- Health: 1
- Armor: 0
- Damage: 1
- Movement Speed: 3
- Target: End
- Dropped Scrap: 10
- Special: None

Spike Slime:
- Health: 2
- Armor: 0
- Damage: 1
- Movement Speed: 4
- Target: End
- Dropped Scrap: 12
- Special: None

Skeleton:
- Health: 2
- Armor: 5
- Damage: 2
- Movement Speed: 4
- Target: End
- Dropped Scrap: 15
- Special: None

Metalon:
- Health: 5
- Armor: 10
- Damage: 5
- Movement Speed: 2
- Target: End
- Dropped Scrap: 20
- Special: None

Rhino:
- Health: 30
- Armor: 20
- Damage: 5
- Movement Speed: 2
- Target: Towers
- Dropped Scrap: 15
- None

Golem:
- Health: 30
- Armor: 30
- Damage: 5
- Movement Speed: 2
- Target: Towers
- Dropped Scrap: 200
- Special: None

Titan:
- Health: 80
- Armor: 80
- Damage: 5
- Movement Speed: 2
- Target: End
- Dropped Scrap: 350
- Special: None

Rock Throwing Golem:
- Health: 35
- Armor: 35
- Damage: 5
- Movement Speed: 2
- Target: Towers
- Dropped Scrap: 300
- Special: Ranged AOE Damage

Soul Eater Dragon:
- Health: 30
- Armor: 30
- Damage: 5
- Movement Speed: 2
- Target: Towers
- Dropped Scrap: 300
- Special: Flying Ranged

Terror Bringer Dragon:
- Health: 50
- Armor: 50
- Damage: 5
- Movement Speed: 2
- Target: End
- Dropped Scrap: 250
- Special: Flys to the end then attacks on ground

Nightmare Dragon:
- Health: 70
- Armor: 70
- Damage: 5

- Movement Speed: 2
- Target: Towers
- Dropped Scrap: 350
- Special: None

Usurper Dragon:
- Health: 5000
- Armor: 5000
- Damage: 500
- Movement Speed: 2
- Target: Anything in range
- Dropped Scrap: 1000
- Special: Final Boss

Towers:

Rifle Tower: Medium Range; Medium Damage; Medium Fire Rate

Machine Gun Tower: Medium Range; Low Damage; High Fire Rate

Sniper Tower: High Range; High Damage; Low Fire Rate

Rocket Tower: Medium Range; High AOE Damage; Low Fire Rate

Mortar Tower: High Range/ Cannot Hit Close; High Damage; Medium Fire Rate

Air Defense: Medium Range; Medium Damage; High Fire Rate

Weapons: Total Unlock Cost = TBD

Pistol:
- 1 Damage
- .7 Accuracy
- 1 Bullet per Shot
- 90 Rounds per Minute
- 2 Second Reload
- 13 Round Mag
- 100 Scrap Unlock Cost

Shotgun:
- 1 Damage
- .4 Accuracy
- 7 Bullets per Shot
- 30 Rounds per Minute
- 3 Second Reload
- 8 Round Mag
- 100 Scrap Unlock Cost

SMG:

- 1 Damage
- .6 Accuracy
- 1 Bullet per Shot
- 240 Rounds per Minute
- 2 Second Reload
- 20 Round Mag
- 100 Scrap Unlock Cost

Sniper:
- 5 Damage
- 1 Accuracy
- 1 Bullet per Shot
- 15 Rounds per Minute
- 5 Second Reload
- 5 Round Mag
- 100 Scrap Unlock Cost

Assault:
- 2 Damage
- .8 Accuracy
- 1 Bullet per Shot
- 180 Rounds per Minute
- 3 Second Reload
- 30 Round Mag
- 100 Scrap Unlock Cost

LMG:
- 1 Damage
- .4 Accuracy
- 1 Bullet per Shot
- 500 Rounds per Minute
- 8 Second Reload
- 100 Round Mag
- 100 Scrap Unlock Cost

RPG:
- 20 Damage
- .6 Accuracy
- 1 Bullet per Shot
- 8 Rounds per Minute
- 6 Second Reload
- 100 Scrap Unlock Cost

Perks: Total Unlock Costs = 7800 Scrap + Armor + Barricades (TBD)

Frag Grenade: Explodes after set timer
- Unlock Cost: 1000 Scrap
- Cooldown: 8s

Impact Grenade: Explodes on impact

- Unlock Cost: 1200 Scrap
- Cooldown: 10s

Stun Grenade: Stuns enemies
- Unlock Cost: 800 Scrap
- Cooldown: 4s

Stimpack: Increases move and reload speed
- Unlock Cost: 500 Scrap
- Cooldown: 40s

Repair Kit: Restores HP to nearby towers
- Unlock Cost: 1500 Scrap
- Cooldown: 60s

Healthpack: Restores Health
- Unlock Cost: 800 Scrap
- Cooldown: 30s

NanoBots: Restore Armor
- Unlock Cost: 800 Scrap
- Cooldown: 30s

Light/Medium/Heavy Armor: Unlocks armor points

Waves: Starting scrap = 250
1: 250
- ; Health; Scrap
- Total Health
- Scrap Gained

2:
- ; Health; Scrap
- Total Health
- Scrap Gained

3:
- ; Health; Scrap
- Total Health
- Scrap Gained

4:
- ; Health; Scrap
- Total Health
- Scrap Gained

5:
- ; Health; Scrap
- Total Health
- Scrap Gained

6:
- ; Health; Scrap
- Total Health
- Scrap Gained

7:
- ; Health; Scrap
- Total Health
- Scrap Gained

8:
- ; Health; Scrap
- Total Health
- Scrap Gained

9:
- ; Health; Scrap
- Total Health
- Scrap Gained

10:
- ; Health; Scrap
- Total Health
- Scrap Gained

11:
- ; Health; Scrap
- Total Health
- Scrap Gained

12:
- ; Health; Scrap
- Total Health
- Scrap Gained

13:
- ; Health; Scrap
- Total Health
- Scrap Gained

14:
- ; Health; Scrap
- Total Health

- Scrap Gained

15:
- ; Health; Scrap
- Total Health
- Scrap Gained